IN THE CLAIMS:

1. (Previously presented) A system for measuring distances, the system comprising:

a first conductive element and a second conductive element so disposed with respect to each other that, when the first and second conductive elements extend through a dielectric mismatch boundary, a first electromagnetic signal will induce a second electromagnetic signal to propagate along the second conductive element;

a transmitter operable to drive the first electromagnetic signal along the first conductive element without also driving the second conductive element;

a receiver operable to receive the second electromagnetic signal; and

a processor operable to determine, at least in part from a time delay between the first and second electromagnetic signals, a distance associated with the dielectric mismatch boundary.

2. (Original presented) The system of claim 1 wherein the first electromagnetic signal exhibits an ultra-wideband frequency.

3. (Cancelled)

4. (Previously presented) The system of claim 1 wherein the receiver is further operable to detect the time delay between the first and second electromagnetic signals.

5. (Original) The system of claim 4 wherein the receiver includes an equivalent time sampling circuit.

6. (Original) The system of claim 1 wherein the first and second conductive elements form a parallel conductor transmission line structure.

7. (Original) The system of claim 1 wherein the first and second conductive elements are flexible.

8. (Original) The system of claim 1 wherein the first and second conductive elements exhibit quadrilateral cross-sections.

9. (Original) The system of claim 1 wherein the first and second conductive elements exhibit substantially identical cross-sections.

10. (Previously presented) The system of claim 21 wherein the coupler exhibits a length corresponding to at least one-quarter of a propagation velocity pulse length of the first electromagnetic signal.

11. (Previously presented) The system of claim 21 further comprising a supporting material for slidably receiving the coupler in a channel defined therein, the supporting material maintaining a consistent displacement between the coupler and the first and second conductive elements.

12. (Original) The system of claim 1 wherein the distance determined by the processor corresponds to a dimension associated with an object.

13. (Original) The system of claim 1 wherein the distance determined by the processor corresponds to a displacement between a plurality of objects.

14. (Original) The system of claim 1 wherein the distance determined by the processor corresponds to an angular orientation.

15. (Original) The system of claim 1 wherein the distance determined by the processor corresponds to a degree of pressure.

16. (Previously presented) A method of measuring distances, the method comprising:

driving a first electromagnetic signal along a first conductive element without also driving a second conductive element, where the first and second conductive elements are so disposed with respect to each other that, when the first and second conductive elements

extend through a dielectric mismatch boundary, a first electromagnetic signal will induce a second electromagnetic signal to propagate along the second conductive element;

receiving the a second electromagnetic signal; and

determining, at least in part from a time delay between the first and second electromagnetic signals, a distance associated with the dielectric mismatch boundary.

17. (Previously presented) The method of claim 16 wherein the distance corresponds to a dimension associated with an object.

18. (Previously presented) The method of claim 16 wherein the distance corresponds to a displacement between a plurality of objects.

19. (Previously presented) The method of claim 16 wherein the distance corresponds to an angular orientation.

20. (Previously presented) The method of claim 16 wherein the distance corresponds to a degree of pressure.

21. (Previously presented) The system according to claim 1, further comprising:

a coupler slidable along the first and second conductive elements for so coupling the first and second conductive elements as to launch the second electromagnetic signal along the second conductive element when the first electromagnetic signal reaches the position of the coupler.

22. (Previously presented) The system according to claim 1, wherein the first electromagnetic signal propagates from a first end of the first conductive element toward a second end of the first conductive element, and the propagation of the first electromagnetic signal through the boundary will induce the second electromagnetic signal to propagate along the second conductive element toward a first end of the second conductive element.

23. (Previously presented) The method according to claim 16, further comprising:

coupling, with a coupler, the first and second conductive elements as to launch the second electromagnetic signal along the second conductive element when the first electromagnetic signal reaches the position of the coupler, wherein the coupler is slidable along the first and second conductive elements.

24. (Previously presented) The method according to claim 16, wherein the first electromagnetic signal propagates from a first end of the first conductive element toward a second end of the first conductive element, and the propagation of the first electromagnetic signal through the boundary will induce the second electromagnetic signal to propagate along the second conductive element toward a first end of the second conductive element.

25. (Previously presented) A system for measuring distances, the system comprising:

a first conductive element and a second conductive element;

a transmitter operable to drive a first electromagnetic signal along the first conductive element without also driving the second conductive element;

a coupler slidable along the first and second conductive elements for so coupling the first and second conductive elements as to launch a second electromagnetic signal along the second conductive element when the first electromagnetic signal reaches the position of the coupler;

a receiver operable to receive the second electromagnetic signal; and

a processor operable to determine, at least in part from a time delay between the first and second electromagnetic signals, a distance associated with the position of the coupler.